

A note about “indexing”---

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As was discussed in the training videos, indexing is a technique possibly applied to single, two point, and three point control restorations of lost corners (see 7-15 and 7-57 of the 2009 Manual). This is not a commonly applied practice due to the lack of sufficient data to support its use in a given situation. A discussion follows:

As the Manual implies, what is intended by *record* distance is the measure established in the original survey. This tells us that even with a “run the record” solution in a restoration, we are more interested in what they actually did versus what they *said* they did. As with all other methods of proportioning, we adjust the record dimensions based on what we find the actual measure to be. Indexing is a method to do this when we have no other corner along the line with the “lost corner” with which to compare record and measured. In other words, if we have sufficient proof that every time the original surveyor said he went 40 chains, he actually went 40.40 chains, we are allowed to make that adjustment to the record distances in one of these restoration methods. The same can be done with bearing as well.

In order to index a bearing or a distance, one must have collected sufficient data to support the adjustment. Although not in the current Manual, the 1947 edition (§383) said one must retrace “many miles” and the information must be “conclusive” and “definite”. This means one cannot “index” by using the line just before the lost corner, or even a couple of sections in the area. We are trying to prove that the original surveyors’ chain is long or short, or his instrument was left or right of true bearing. A sampling of one or two lines is hardly sufficient to make this “definite” and “conclusive”. In fact, one can usually disprove the validity of an index by just looking at a couple of other lines in the area.

If one were to retrace several miles of original survey, and found that in *almost every case*, the surveyor went 40.40 when claiming 40.00, we could apply this index to the record in a point control method restoration. A properly done index is not simply a “mean” of the data for a few miles. It looks for a consistent error in direction and magnitude. Upon sufficient data collection, one could apply basic statistical analysis to the data by removing measurements which obviously contain some other source of “error”, thus applying the analysis to a consistent sample. Those with experience in indexing also point out that lines run on “true” are not generally comparable to those run on “random and true”, for obvious reasons.

You are cautioned that, given the size of projects most modern surveyors work on in the PLSS, there will be few opportunities to find a truly indexable point control situation.